

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
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)	
UPDATE TO PARTS 2 AND 25 CONCERNING)	IB Docket No. 16-408
NON-GEOSTATIONARY, FIXED-SATELLITE)	
SERVICE SYSTEMS AND RELATED MATTERS)	
)	

COMMENTS OF SPACE EXPLORATION TECHNOLOGIES CORP.

Space Exploration Technologies Corp. (“SpaceX”) hereby comments on the Further Notice of Proposed Rulemaking (“*FNPRM*”)¹ in which the Commission has proposed to remove the domestic coverage requirement for non-geostationary satellite orbit (“NGSO”), Fixed-Satellite Service (“FSS”) systems operating in all permitted spectrum bands. SpaceX agrees with the Commission’s conclusion that elimination of this requirement will afford operators greater flexibility in their system designs without compromising widespread services offerings. Even though SpaceX’s proposed NGSO system will provide service to virtually any location on the planet, SpaceX recognizes that not all systems should be compelled to cover specific territory regardless of the customer needs they seek to address. Accordingly, as discussed below, SpaceX supports the Commission’s proposal as the next step in a sensible recalibration of regulation for NGSO systems.

The Commission eliminated its international coverage requirement for NGSO FSS systems in the first phase of this proceeding. Under that former rule, each proposed system had to be

¹ *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, 32 FCC Rcd. 7809, ¶¶ 73-76 (2017) (“*FNPRM*”).

capable of providing service to all locations as far north as 70° North Latitude and as far south as 55° South Latitude for at least 75 percent of every 24-hour period. The Commission took this step noting that the requirement prohibited the use of certain NGSO orbits and system designs, and every commenter agreed that its removal would afford NGSO operators greater design flexibility.² At that time, SpaceX had urged the Commission to eliminate the domestic coverage requirement as well, but the Commission concluded that this issue fell outside the scope of the original proceeding, and thus raised it as a separate issue for consideration in the *FNPRM*.³

The domestic coverage requirement provides that:

an NGSO FSS applicant proposing to operate in the 10.7-12.7 GHz, 12.75-13.25 GHz, 13.75-14.5 GHz, 18.8-19.3 GHz, or 28.6-29.1 GHz bands must provide a demonstration that the proposed system is capable of providing FSS on a continuous basis throughout the fifty states, Puerto Rico, and the U.S. Virgin Islands.⁴

As the *FNPRM* notes, this requirement effectively precludes certain NGSO system designs (just as its international counterpart previously had done).⁵ For example, NGSO systems that operate near the plane of the equator may not be able to provide service in high-latitude regions of Alaska, while systems that concentrate coverage at the poles may not be able to provide service throughout the continental United States (“CONUS”), and those optimized for service to CONUS might not serve Hawaii. Thus, the rule could effectively preclude an innovative NGSO design that would meet an identifiable market need. Moreover, by adopting rules that encourage efficient spectrum

² See *id.*, ¶¶ 69-70. The Commission also revised its milestone requirement for system implementation, but recognized that this requirement “is not necessarily related to the coverage of the system.” *Id.*, ¶ 67 n.152.

³ See *id.*, ¶ 70 n.160.

⁴ 47 C.F.R. § 25.146(b). This codification of the rule was adopted in the *FNPRM*, but has not yet become effective.

⁵ See *FNPRM*, ¶ 75.

sharing among NGSO systems, the Commission ensures that the use of valuable resources to serve one portion of the globe will not preclude their use by another system to serve other areas.⁶

As a result, the Commission regularly has issued waivers where strict application of this rule would have been counterproductive. For example, the Commission granted a waiver of this rule to Space Norway, which proposed an NGSO system focused on providing service in the Arctic region, based in part upon the recognition that “several of the other NGSO FSS applicants intend to provide communications coverage to all U.S. states and territories, thereby mitigating concerns about Space Norway’s lack of coverage to other regions of the United States.”⁷ The Commission granted a similar waiver to O3b Networks Ltd. (“O3b”) because the O3b system “operates in an equatorial orbit as opposed to inclined orbit and as a result, due to look angle constraints, there is a limitation on the northernmost and southernmost latitudes that can be served by its system.”⁸ Notably, O3b’s NGSO system would provide service in the areas of the United States that Space Norway’s NGSO system could not reach, and vice versa. These specialized systems would not satisfy the Commission’s requirement for more universal domestic coverage, yet clearly could have a productive part to play in the overall mix of NGSO systems serving the United States.

The nation’s communications needs continue to evolve rapidly. NGSO satellite system operators should be free to evolve as well, in order to design and implement constellations optimized to meet that demand and to address the opportunities that arise in the future. A

⁶ As the Commission recognizes, its domestic coverage requirement for NGSO FSS systems arose “from a similar requirement placed on NGSO MSS systems which are, as a general matter, unable to share spectrum without causing harmful interference.” *Id.* ¶ 74. The ability to share spectrum among FSS systems is a significant difference that supports a different regulatory regime.

⁷ See *Space Norway AS*, FCC 17-146, ¶ 20 (rel. Nov. 3, 2017).

⁸ Grant Stamp, IBFS File Nos. SAT-LOI-20141029-00118 and SAT-AMD-20150115-00004, ¶ 14 (first issued Jan. 22, 2015).

geographic coverage requirement imposes an artificial constraint on such technological evolution and innovation, and may prevent developments that would better serve the nation in the future. Moreover, such a constraint is unnecessary given the number of existing and proposed satellite systems available to serve customers throughout the United States and their ability to do so using shared spectrum. These diverse platforms will provide connectivity to consumers and businesses throughout the country, rendering a coverage requirement imposed on all systems no longer appropriate.

Once fully deployed, the SpaceX NGSO system will provide broadband service on a full-time basis to customers located virtually anywhere on the entire planet, fully complying with the Commission's requirements for domestic geographic coverage. Nonetheless, SpaceX agrees with the Commission that there is no need to require all NGSO FSS systems to cover all U.S. states and territories. Imposing such an obligation would needlessly reduce flexibility of NGSO system designers, and thereby potentially preclude technological innovation. Accordingly, the Commission should implement its proposal to remove the domestic coverage requirement for NGSO FSS systems operating in all permitted spectrum bands.

Respectfully submitted,

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